

# Vturn - V560/V760/V1000

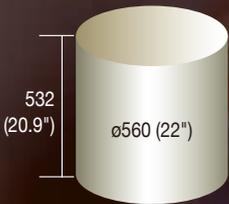
## Vertical Turning Lathes

- **Box Slideways** for heavy cutting
- **Meehanite® Casting** for high reliability
- **High Rapid Feed** for improved productivity
- **Leakage Free Coolant System** with optimum chip disposal



# Vturn - V560

## Turning Area



## Compact VTL designed for heavy cutting

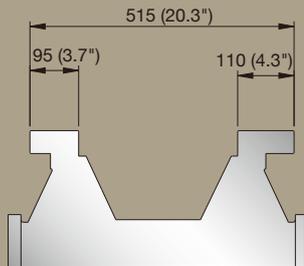
Following on from the Victor Taichung extremely successful range of horizontal lathes, our range of vertical lathes has been designed to meet higher roundness requirements.

## Fast indexing hydraulic turret

- Curvic coupling for high accuracy positioning.
- Hydraulic clamping for heavy cutting.
- Fast indexing with bi-directional random selection.

## Wide Span for high rigidity

- Moving column with 515 mm wide span sits on the machine base ensuring a stable structure for heavy cutting.



## High power and high torque spindle

- Encased in a heavily ribbed headstock for maximum heat dissipation.
- A wide range spindle motor delivers maximum torque at a very low spindle speed of only 216 rpm.
- 12" hydraulic chuck as standard with an optional 10" chuck available for use at higher spindle speeds up to 3500 rpm.
- NN type roller bearings featuring large contact areas which facilitate heavy cutting, whilst an angular thrust bearing absorbs the cutting forces.
- An optional C-axis spindle with 0.001 degree indexing is available along with a BMT turret which allows secondary machining operations such as milling and drilling to be performed in one set up.



615 (24.2")

448 (17.6")

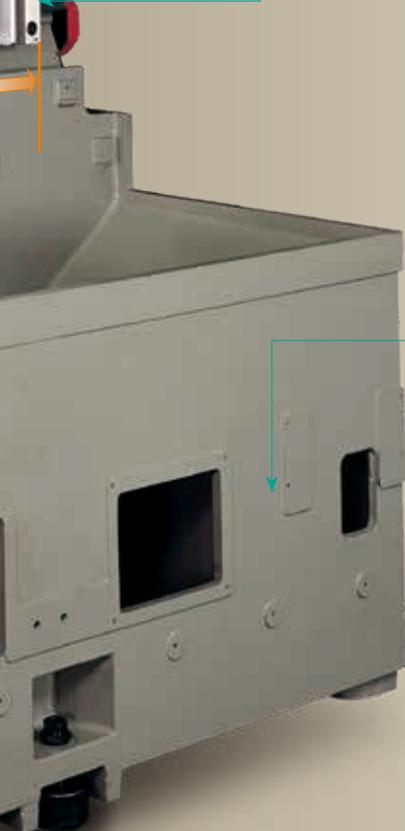
### Box slideways for optimal dynamic stiffness

- A moving carriage with large base is fitted to the box slideways bolted on Z-axis column to ensure optimal rigidity and uniform cutting conditions at any location.
- 15/24 m/min rapid feed rate in X/Z axes bonded with Turcite-B and forced lubrication improve performance by eliminating stick-slip characteristics normally inherent in plain contact surface.
- The counter balanced design featuring powerful servo motors and large diameter ballscrews guarantee minimal wear to the box slideways thus prolonging the machines service life.
- The Z-axis motor incorporates a brake which prevents the turret falling should a sudden loss of power occur.



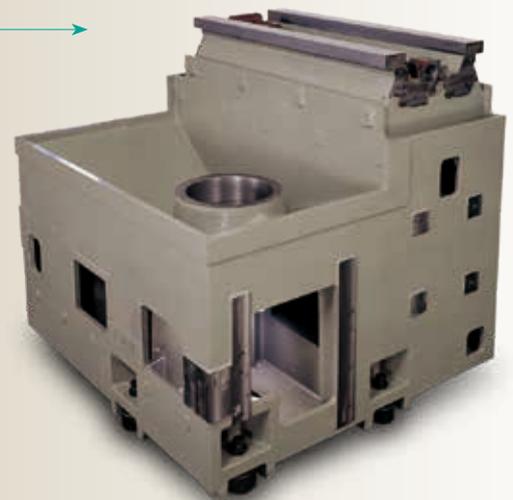
### Leakage free coolant system with optimum chip disposal

- The rear disposal chip conveyor allows easy integration into a manufacturing cell.
- Coolant and chips are collected in the machine base, guaranteeing no coolant leakage during machining.
- The large coolant tank with a capacity of 260 litres minimizes heat build up during continuous production.



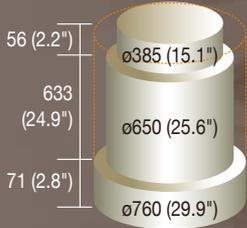
### Meehanite® cast iron structure

- The Meehanite® gray cast iron provides the structural stiffness and vibration damping properties which provide superior surface finishes and prolong the machines service life.
- The one piece box structure with box slideways provides the machine optimal structural rigidity.
- The steeply angled design of the machine base around the chuck and spindle areas minimizes swarf accumulation.
- The FEM (Finite Element Method) determined, optimized ribbed structure minimizes deformation during the machining operation.



# Vturn - V760

## Turning Area



## High rigidity and high reliability VTL

With a maximum turning diameter of 760 mm (29.9") and a swing of 900 mm (35.4"), the Vturn-V760 meets the increasing demands for large size and/or heavy part turning. The standard Fanuc  $\alpha$ P40i wide range motor along with ZF gearbox provide high torque at extremely low spindle speeds.

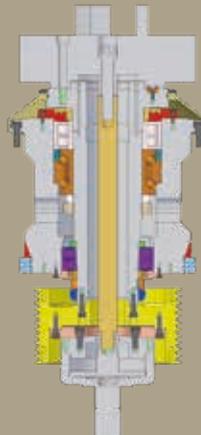
## Wide range spindle motor coupled with gearbox

- Fanuc motor  $\alpha$  30 offers high output 37 KW (50 HP).
- The German made ZF gearbox which lowers the base speed to 149 rpm provides the capability to efficiently machine the most exotic alloys at low rpm.
- The 2 stage gearbox also allows for the machining of smaller parts at higher speeds.



## High power and high torque spindle

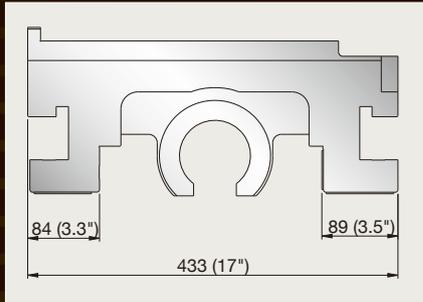
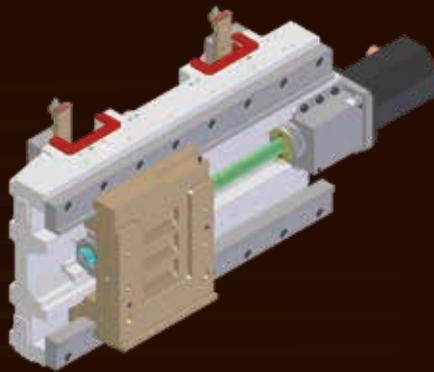
- Encased in a heavily ribbed headstock providing maximum heat dissipation.
- 18" solid chuck as standard and available with optional 15" / 21" / 24" chucks.
- NN type roller bearings featuring large contact areas which facilitate heavy cutting, whilst an angular thrust bearing absorbs the cutting forces.
- An optional C-axis spindle with 0.001 degree indexing is available along with a VDI-50 or BMT-75 turret which allows secondary machining operation such as milling and drilling to be performed in one set up.



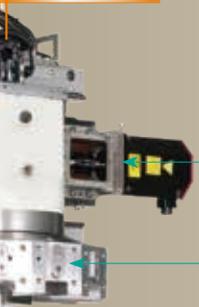


### Wide span box slideways

- The heavy column with a wide span of 850 mm (33.5") sits on the machine base providing a stable structure for heavy machining.
- The carriage for the hydraulic turret also features a wide span of 433 mm (17") ensuring the rigidity required for heavy machining.
- Z-axis motor of 7 kW (9.4 HP) ensures smooth operation and improves drilling capability.



130 (5.1") x 2



### Fast indexing hydraulic turret

- Curvic coupling for high accuracy positioning.
- Hydraulic clamping for heavy cutting.
- Fast indexing with bi-directional random selection provides quick tool selection.

### Meehanite cast iron

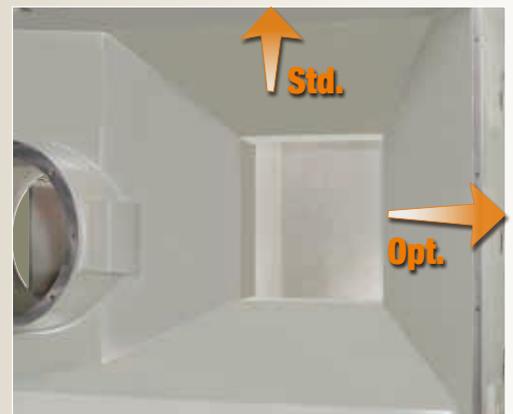
- Supplied by Victor Taichung's own foundry, this Meehanite casting features superior vibration damping and high rigidity providing improved surface finishes.
- All castings are certificated by following Meehanite process for high quality nodular gray iron.



## MEEHANITE

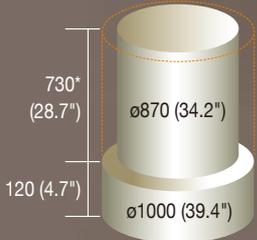
### Leakage Free Coolant System with optimum chip disposal

- A Rear Disposal chip conveyor allows easy integration into a manufacturing cell.
- An optional Right Disposal chip conveyor is also available which is suitable for stand alone machines.
- The coolants and chips are collected by the cast base guaranteeing no leakage.
- The large coolant tank minimizes heat build up during continuous production.



# Vturn - V1000

## Turning Area



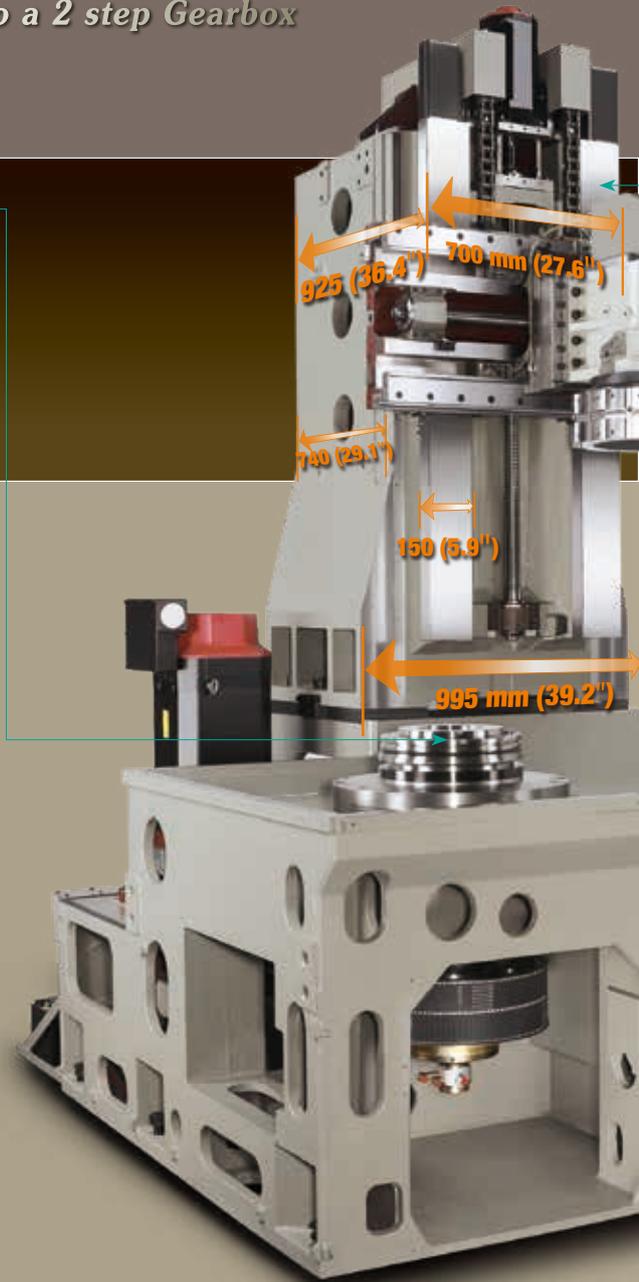
\*705mm (27.7") for Vturn-V1000CM

## High reliability VTL with turning diameter 1000mm

Following the success of our Vturn-V760, with a swing diameter of 1100mm (43.3") and a maximum turning diameter of 1000mm (39.4"), the VTL Vturn-V1000 with its powerful 45kW (60HP) spindle motor coupled to a 2 step Gearbox provides high torque at low rpm's.

## High rigidity spindle with NN type bearings

- NN type bearings featuring double rollers with double contact area facilitate heavy cutting and longer surface life.
- 24" solid chuck as standard and available with bigger chuck up to 40".

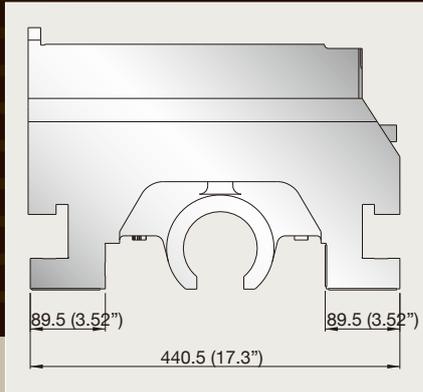


## Powerful spindle motor coupled with gearbox

- Fanuc spindle motor a40i offers 45kW (60HP) output.
- German made ZF gearbox is included as standard to lower the base speed to 96 rpm for heavy cutting on steel parts with high torque 4490 Nm (3312 ft-lbf).
- 2 step gearbox facilitates higher speed turning on the smaller parts.

### Wide span box slideways

- The heavy duty column with a wide span of 995mm (39.2") attached to the machine base provides a stable structure for heavy machining.
- The hydraulic turret is also designed with a wide span of 440.5mm (17.3") to ensure sufficient rigidity for heavy machining.
- The 7kW (9.4HP) high torque Z-axis motor ensures heavy duty drilling capability.



### Bolt Mounted Turret (BMT-85)

- Fast indexing BMT-85 turret with bi-directional random selection for quick selection.
- Hirth coupling is included for high positioning accuracy.

### Integral chip disposal without coolant leakage

- **Rear disposal** chip conveyor can be bolted and fastened on the machine base without sitting on the coolant tank so the tank can be removed separately and easily for maintenance.
- **Optional Right Disposal** chip conveyor is also available which can be useful for stand alone machines.
- Coolants and chips are collected by casted base guarantees no leakage onto the ground floor.
- Large coolant tank reduces the heat rise-up to affect machining accuracy.



# Standard Accessories

## Reliable Fanuc Oi-TF Plus control system

- The proven reliability of Fanuc Oi-TF Plus controller is combined with Victor's own designed PLC to offer the customer an integral control system with 10.4" LCD monitor for color graphic display.
- Large inside space design of electrical cabinet and fully protected cables assure optimal heat dissipation for long time machining.



## Solid power chuck

- Autogrip® or Autostrong® hydraulic solid chucks are included on all lathes.
- Chuck is foot operated for safe and easy operation.
- Kitagawa® chuck (optional) can be also specified if required.

## Chip conveyor and cart

Separate chip conveyor is positioned from the rear of machine to reduce machine width to facilitate line production.



## Victor's lubrication pump

- Victor's own lube pump including Japanese-made pressure switch offers the required lubricants between contact surfaces of box slideways to ensure smooth and continuous movement.

## Air conditioner for electrical cabinet

To prolong the service life on the costly control components, air conditioner is installed to remove heat away from the electrical cabinet.



# Optional Accessories

## Manual tool presetter (by Renishaw®):

The tedious time-consuming cuts to determine tool geometry can be reduced by manual tool presetter (M.T.P.) With Renishaw® repeatable arm with RP3 probe is employed, the tool offset value is compensated automatically to the according parameters. Detachable design enlarges the turning range on big diameter parts without interference.



## VDI / BMT turret with live tooling

VDI tool holders provide an accurate and fast method of affixing tool holders to the turret disk. The round serrated shank tool holders fit into the tool pockets located on the face of the tool disc to achieve precise, rigid and secure locking of the tool holder. Live tooling option is also available by VDI turret (VT-V760CV) or BMT turret (CM option) for all models.

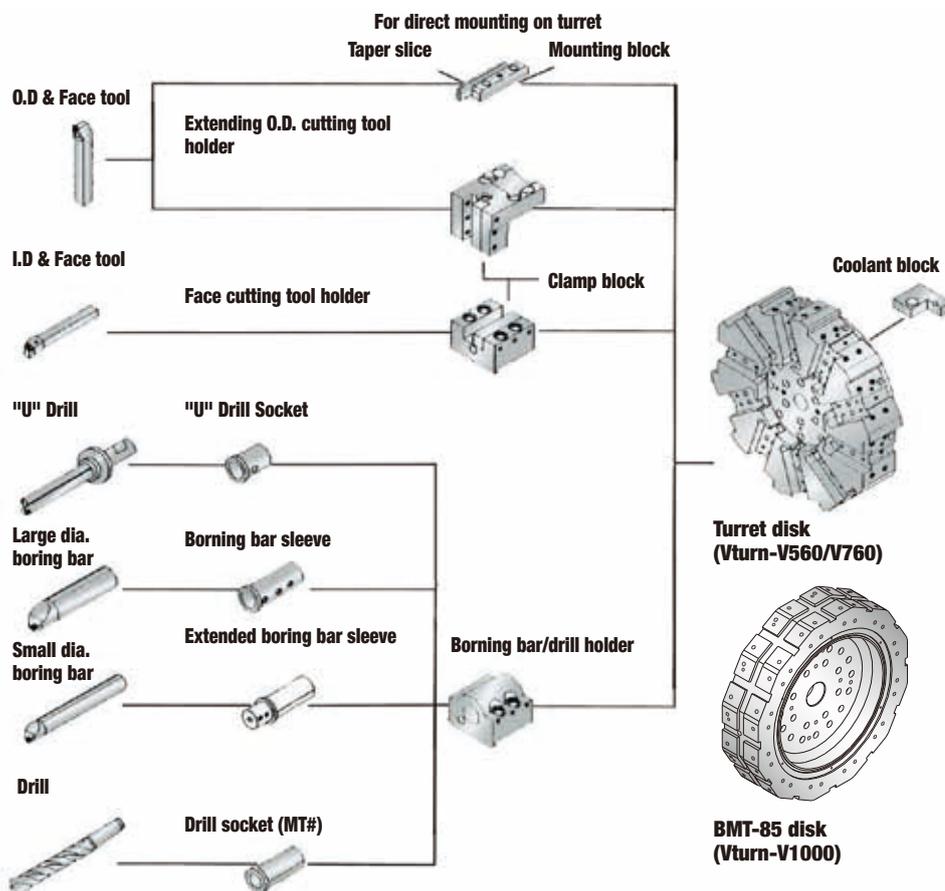


## High pressure Coolants

Higher pressure coolants help removing chips more efficiently to improve surface finish on the machined parts.



# Standard tooling accessories (excl. live tools or VDI tool holders)



TOOLS \ MODEL	VT-V560	VT-V760	VT-V1000
No. of tool stations	8	12	12
Tool shank for turret disk	32 mm	32 mm	32 mm
Maximum boring bar dia.	50 mm	60 mm (Opt. 63 mm)	60 mm (Opt. 80 mm)
Taper slice + mounting block	6	7	-
Extending O.D. cutting tool holder	1	1	4
Face cutting tool holder	1	1	2
<b>Boring bar holder</b>			
32 mm	-	-	-
40 mm	Opt.	-	-
50 mm	5	Opt.	-
60 mm	-	6	4
63 mm	-	Opt.	Opt.
80 mm	-	-	Opt.
<b>Boring bar sleeve</b>			
10 mm	1	-	-
12 mm	1	-	-
16 mm	2	-	-
20 mm	2	2	2
25 mm	2	2	2
32 mm	2	2	2
40 mm	2	2	2
50 mm	-	2	2
Extended boring bar sleeves	-	2	2
<b>Drill socket</b>			
MT3	Opt.	Opt.	Opt.
MT4	1	1	1
<b>U drill socket</b>			
25 mm	1	-	-
32 mm	1	2	2
40 mm	-	2	2

# VICTOR Taichung's FANUC Oi-TF Plus 10.4" Control (Type I) Specifications

## Standard

### ITEM/SPECIFICATION

### DESCRIPTION

#### Controlled Axes:

1. Controlled axes	2 Axes (X, Z)
2. Simultaneous controlled axes	2 Axes
3. Least input increment	0.001mm
4. Least command increment	0.0005mm (X) / 0.001mm (Z)
5. Command system	Incremental / Absolute
6. HRV Control	HRV3+
7. Unexpected disturbance torque detection (AIR-BAG)	Std.
8. Backlash compensation	Std.
9. Stored pitch error compensation	Std.

#### Operation & Program Input:

1. Input / Output interface	RS-232, PCMCIA Card, USB
2. Tool offset	99 sets
3. Sequence number	N5-Digit
4. Program number	O8-Digit
5. Program name	31-characters
6. M code function	M3-digit
7. S code function	S4-digit
8. T code function	T4-digit
9. Positioning	G00
10. Linear interpolation	G01
11. Circular interpolation	G02, G03
12. Programmable data input	G10
13. Plane selection	G17-G19
14. Inch / Metric conversion	G20 / G21
15. Reference position return	G28, G30
16. Thread cutting	G32, G34
17. Threading retract	Std.
18. Tool nose radius compensation	G40-G42
19. Work piece coordinate system	G52-G59
20. Macro, Sub program call	G65, M98, M99 (10 folds nested)
21. Multiple repetitive cycle I & II	G70-G76
22. Canned cycle for drilling	G80-G89
23. Canned cycles	G90, G92, G94
24. Program stop / end	M00-M02 / M30
25. Rigid tapping (Spindle)	M29
26. Manual Guide i	Std.
27. Optional blocks skip 2-9	Std.

#### Feed Function:

1. Manual handle feed rate	X1, X10, X100
2. Rapid traverse rate	F0, 25%, 50%, 100%
3. Cutting feed rate	0-150%
4. Spindle override	50-120%
5. Feed per Minute / Revolution	G98 / G99

#### Edit Operation:

1. Part Program Storage Length (in total)	5120m (2MB)
2. Number of Registerable programs (in total)	1000
3. Part Program Editing	Std.
4. Memory card program entry count extension (Max. 1000)	Std.

#### C Axis Function:

1. Polar coordinate interpolation	Std. (G112/G113)
2. Cylindrical interpolation	Std. (G107)
3. CS contouring control	Std.
4. Spindle control with servo motor	G96.4
5. Coordinate System Rotation	Std.
6. Cylindrical Interpolation	Std. (G107)
7. Coordinate System Rotation	Std.

## OPTIONS

### With hardware included

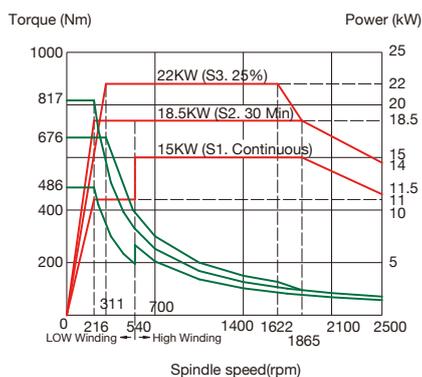
1. Tool life management	<input type="checkbox"/>
2. Program restart	<input type="checkbox"/>
3. Data server (with PCB and CF card 1GB)	<input type="checkbox"/>
4. Ethernet/IP (to be linked to robot)	<input type="checkbox"/>
5. PROFIBUS-DP (to be linked to robot)	<input type="checkbox"/>
6. CC-Link (to be linked to robot)	<input type="checkbox"/>
7. Fast Ethernet (required for SCADA Web with additional RJ45 port)	<input type="checkbox"/>

### Without hardware included

8. Circular thread cutting (G35, G36)	<input type="checkbox"/>
9. AICC-1 (G5.1 Q1, 40 blocks)	<input type="checkbox"/>
10. AICC-2 (G5.1 Q1, 200 blocks)	<input type="checkbox"/>
11. Helical interpolation (C-axis only)	<input type="checkbox"/>
12. Arbitrary speed threading	<input type="checkbox"/>

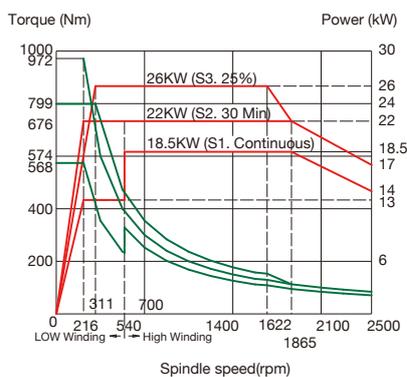
## Spindle Output

### Vturn-V560

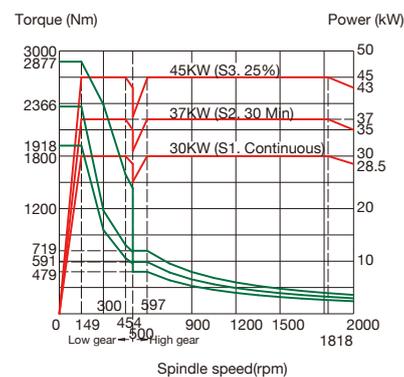


Fanuc  $\alpha$ P30 (std.)

### Vturn-V760



Fanuc  $\alpha$ P40 (opt.)



Fanuc  $\alpha$ il30 + gearbox

# Machine Specification



Item \ model	Unit	Vturn-V560 (CM)	Vturn-V760 (CV / CM)	Vturn-V1000 (CM)	
<b>Capacity</b>	Swing over bed	mm	600	900	1100
	Swing over carriage	mm	540	650	870
	Max. turning dia.	mm	560 (610)	760 (730 for CM)	1000
	Max. turning length	mm	532 (470)	760	850 (825)
	Std. turning dia.	mm	470 (520)	630	885 (756)
<b>Travel</b>	X axis stroke	mm	280+130 (305+105)	380+40 (380+30 for CV) (365+45 for CM)	500+40
	Z axis stroke	mm	540 (470)	780	850
<b>Spindle</b>	Max. spindle speed	rpm	2500	2000	1500
	Spindle nose		A2-8	A2-11	A2-15
	Spindle bore	mm	86	105	105
	Inner bearing	mm	130	160	200
	Chuck diameter	inch	12" (opt. 10"/15"/18")	18" (opt. 15"/21"/24"/28")	24" (opt. 28"/32"/36"/40")
	Max. part weight (incl. chuck)	kg	600	1160	1250
<b>Turret</b>	No. of tools	no.	8 (12)	12	12
	No. of live tools (opt.)	no.	12 (BMT-55)	12 (VDI-50 / BMT-75) (DIN-5480, radial type, left-hand)	12 (BMT-85)
	Tool shank size	mm	32 (25 for CM)	32	32
	Max. boring bar dia.	mm	50 (40 for CM)	60 (opt. 63)	60 (opt. 80)
	Exchange time	sec.	1 (hydraulic) (0.2 servo for CM)	1 (hydraulic) (0.2 servo for CV / CM)	1 (hydraulic) (0.2 servo for CM)
<b>Feedrate</b>	Rapid feedrate	m/min	X/Z = 15/24	X/Z = 20/20	X/Z = 20/20
	X axis ballscrew	mm	Ø50 x P10 (moving column)	Ø40 x P10	Ø50 x P8
	Z axis ballscrew	mm	Ø40 x P12	Ø50 x P10	Ø50 x P8
	JOG feedrate	mm/min	X/Z=0~1260	X/Z=0~1260	X/Z=0~1260
<b>Motor</b>	Spindle motor	kW	15/18.5 (αP30) opt. 18.5/22 (αP40i)	30/37 (α 30i)	37/45 (α 40i)
	Gearbox		opt.	ZF gearbox (Std.)	ZF Gearbox (Std.)
	X/Z axis servo motor	kW	X:4, Z:4	X:4, Z:7	X:4, Z:7
	Milling motor (opt.)	kW	2.2 (αiS8)	7 (αiF30)	7 (αiF30)
	Milling speed	rpm	4000 (opt. 6000)	3000	3000
<b>Machine</b>	Fanuc controller		0i-TF Plus (10.4")	0i-TF Plus (10.4")	0i-TF Plus (10.4")
	Coolant tank	Liter	260	300	400
	W × L × H (including chip conveyor)	mm	1560 × 3250 × 2918	2032 × 3915 × 3400	2510 × 4155 × 3546
	Power requirement	kVA	29 (33 for CM)	35 (39 for CV / CM)	56 (60 for CM)
	Net weight	kg	6100	12500	16000

## Standard accessories

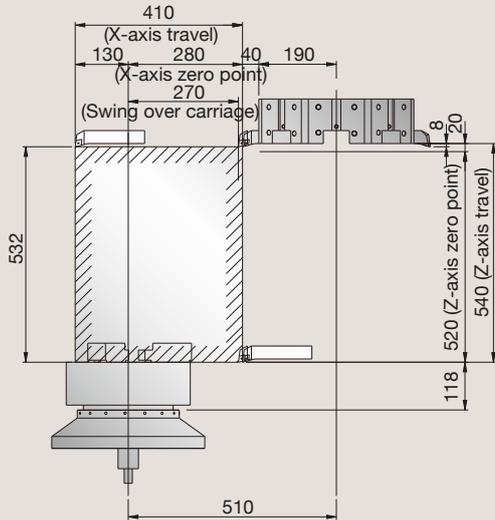
- Solid chuck with soft jaws
- Chip conveyor with cart (rear disposal)
- Automatic forced lubrication
- Fully enclosed splash guarding
- Tool holders (exch VDI / BMT tooling)
- 3 step warning light
- Fanuc 0i-TF Plus (10.4") control
- Remote MPG (handwheel) (except Vturn-V560)
- Oil cooler for gearbox (Vturn-V760/V1000)
- Fanuc e-book (CD)

## Optional accessories

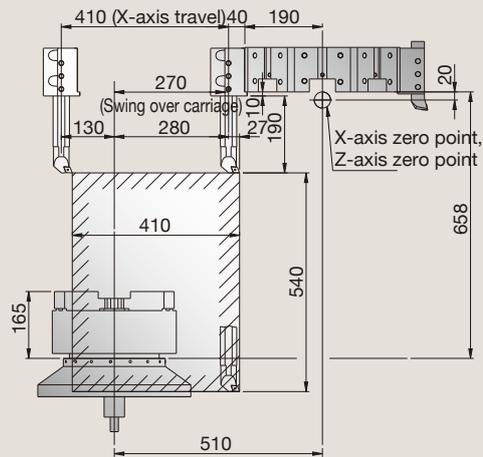
- Bigger chucks (21" chuck/1700rpm, 24" chuck/1400rpm, 28" chuck/1200rpm, 32" chuck/1100rpm, 36" chuck/1000rpm, 40" chuck/800rpm)
- Oil skimmer
- Bigger spindle motor
- Renishaw tool presetter (detachable) (Max. 15" chuck for VT-V560, 24" chuck for VT-V760, 36" chuck for V1000)
- High pressure coolant
- Auto door
- VDI turret (except Vturn-V1000)
- Higher column (100mm more)
- Right disposal chip conveyor (for Vturn-V760/V1000)
- Higher outlet chip conveyor (for Vturn-V560)
- Detachable chip conveyor (to reduce the floor space when cleaning)
- Fanuc manuals

# Vturn-V560

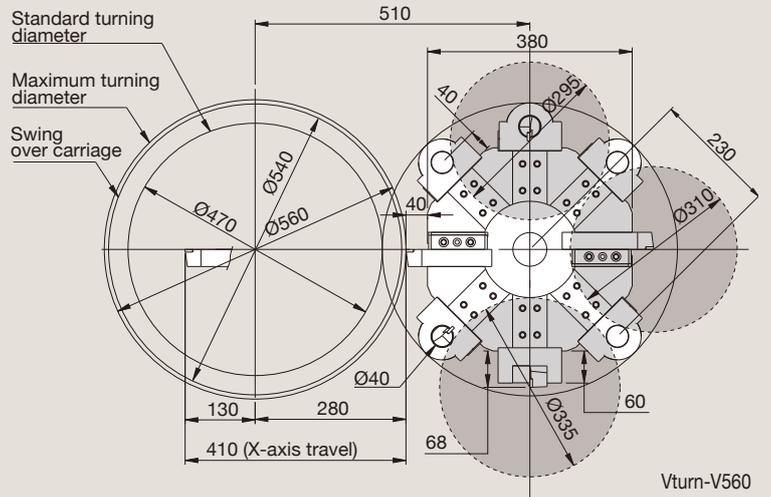
## O.D. Turning range



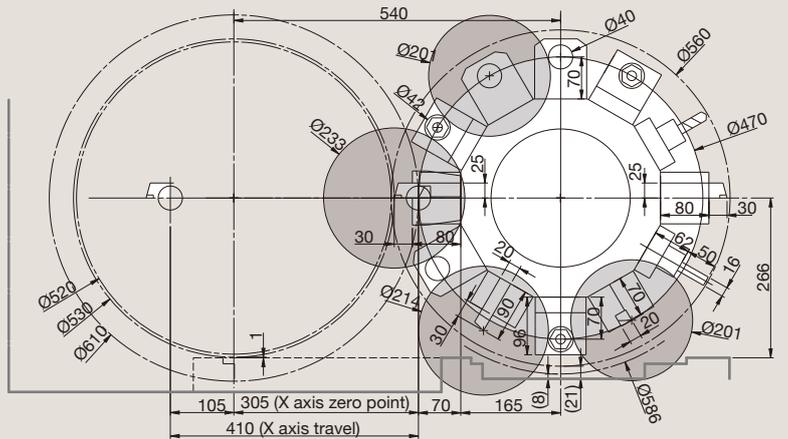
## I.D. Turning range



## Tool interference chart

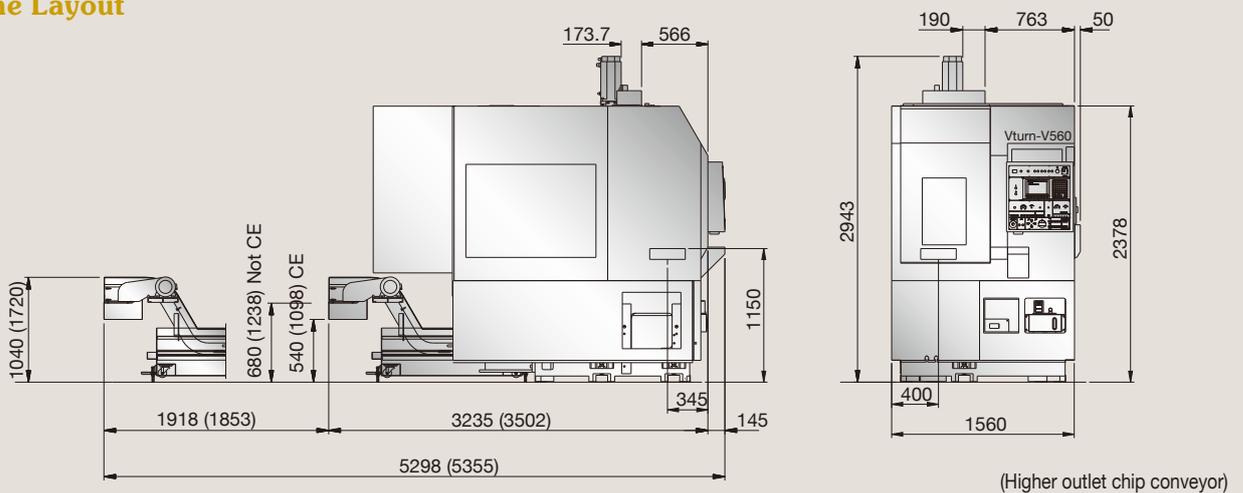


Vturn-V560



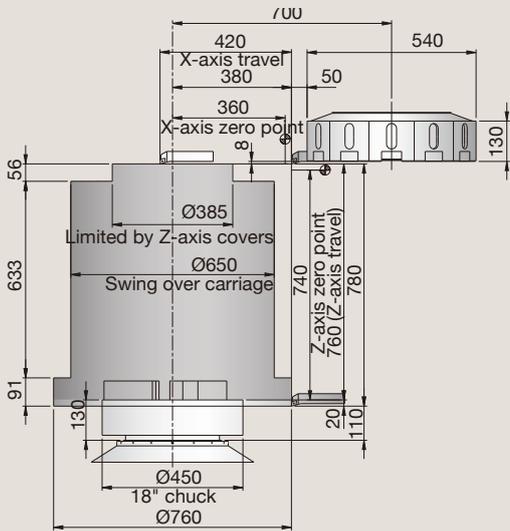
Vturn-V560CM (BMT-55)

## Machine Layout

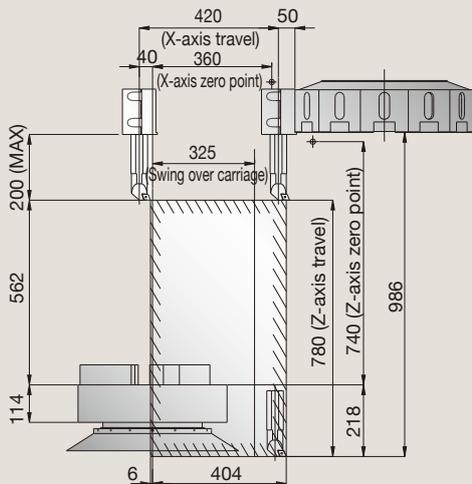


# Vturn-V760

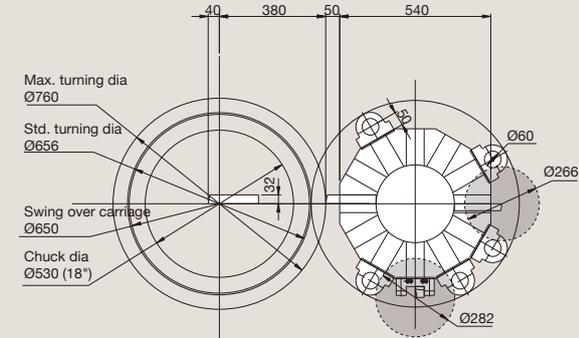
## O.D. Turning range



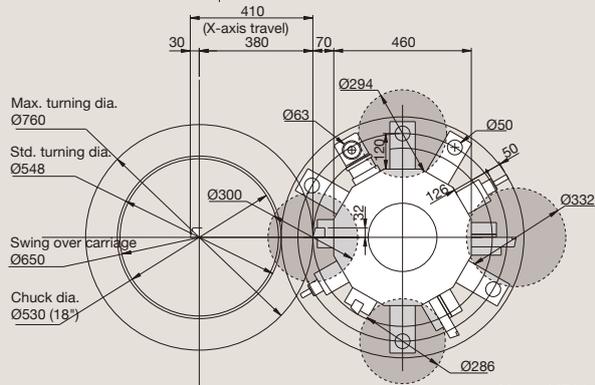
## I.D. Turning range



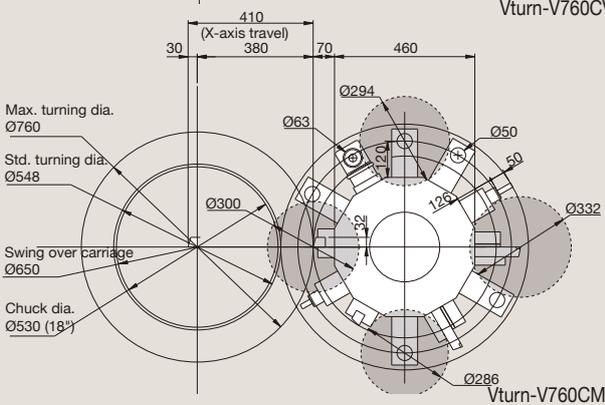
## Tool interference chart



Vturn-V760

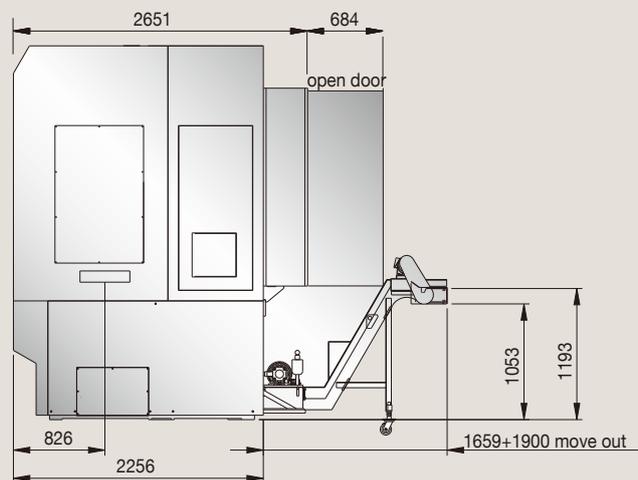
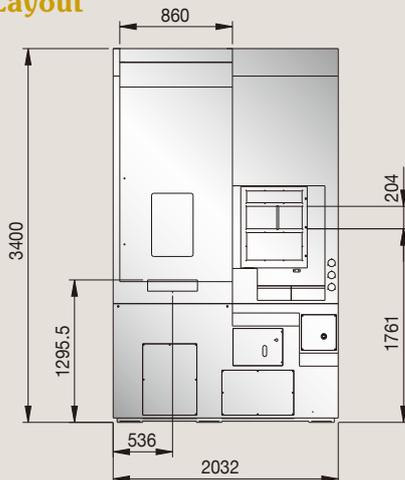


Vturn-V760CV (VDI-50)



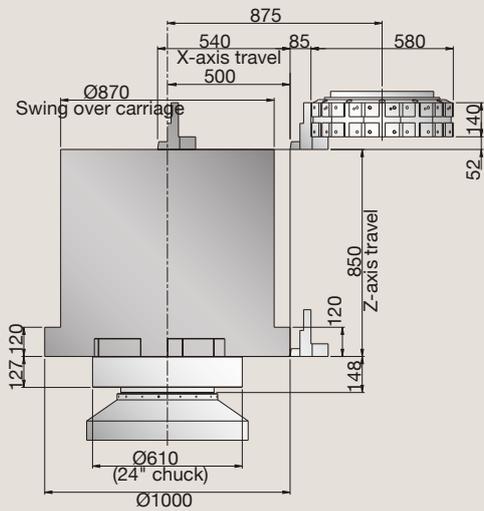
Vturn-V760CM (BMT-75)

## Machine Layout

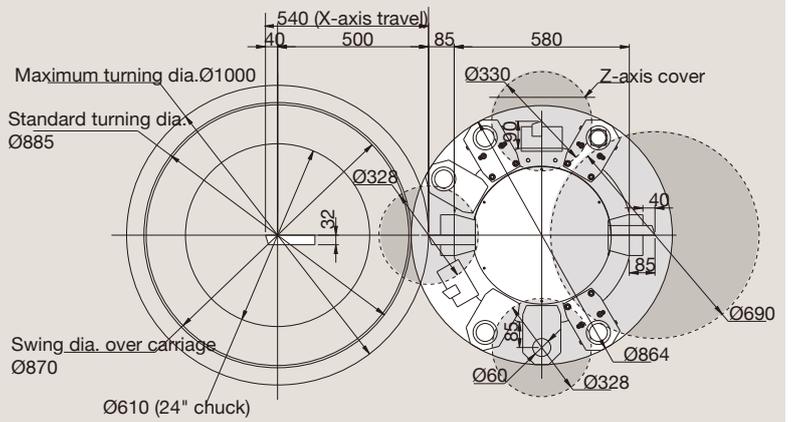


# Vturn-V1000

## O.D. Turning

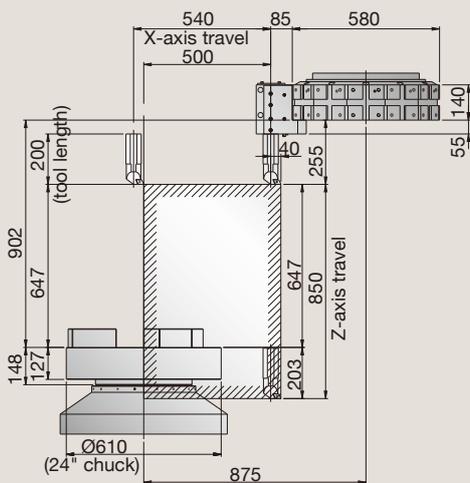


## Tool interference chart

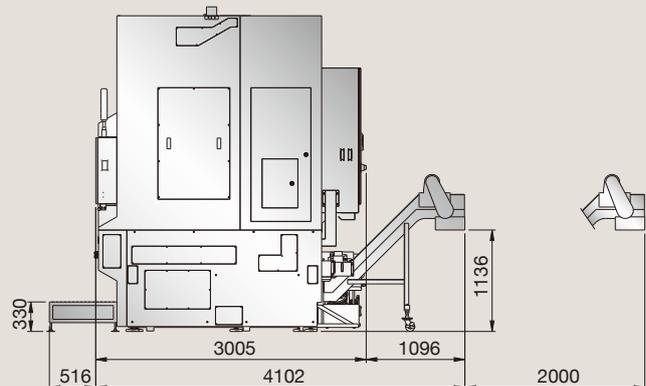
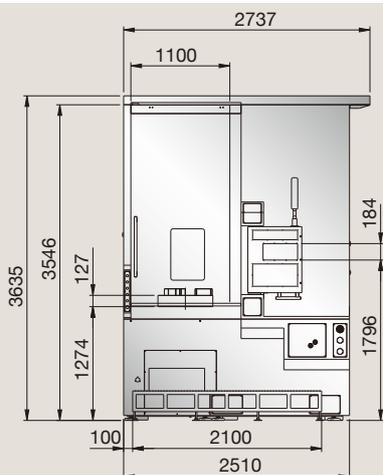
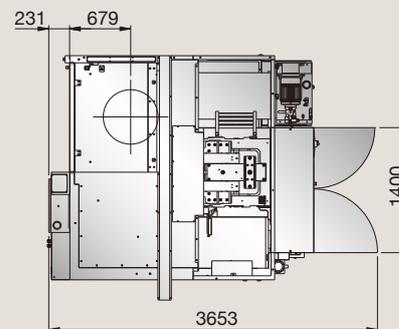


Vturn-V1000

## I.D. Turning



## Machine Layout (excl. Transformer)





# Worldwide Subsidiaries



## ONWARD RISE

To ensure the return on investment, Victor Taichung has invested considerably in setting up a distribution network in terms of global vision local touch for our sales and service supports worldwide. Besides the qualified exclusive agents around the world, Victor Taichung has 7 overseas subsidiaries to provide our customers efficient after-sales service and technical supports.



 **VICTOR TAICHUNG** profile:  
 Sales turnover: USD 207 mill's (in 2021)\*  
 No. of employees: 778  
 \*Exchange rate: 1 USD=28 TWD.



## THE VICTOR-TAICHUNG COMPANIES



HTL    VTL    VMC    HMC    XMT    PIM

### TAIWAN

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Victor France  
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 FAX : 33-1-64772063

### GERMANY

Victor GmbH  
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 FAX : 49-2261-478327

### SOUTH AFRICA

Victor Fortune (PTY) Ltd.  
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 FAX : 27-11-3923899

### MALAYSIA

Victor Machinery (M) SDN. BHD.  
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 FAX : 60-3-56337191

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